

The Effect of  $\gamma$ -Radiation of  $\text{Co}^{60}$  on the Permeability of Polyethylene for Steam

SOV/76-33-7-30/40

tal results (Tables 1,2) indicate the following: The diffusion coefficient (DC) slightly drops with an increase in the radiation dose, and the permeability coefficient and solubility (S) rise considerably. The former is explained by a transition of (I) from the crystalline to the amorphous phase as well as by a concentration of (I) due to a lattice-like polymerization during the formation of transverse compounds. The increase in the (S) of steam in (I) is ascribed to the formation of polar groups under the influence of  $\gamma$ -radiations, which furthermore results in rising permeability of steam. The vigorous increase in the polarity of (I) after irradiation is confirmed by the rise of the quantity  $\text{tg } \delta$ . Irradiation of (I)-insulations for improving their resistivity to heat should be carried out in vacuum or inert atmosphere. A method devised earlier for determining the water permeability of polymeric films by means of tritium-marked water is very sensitive to structural changes of the polymer occurring in radiolysis. This method may be employed for corresponding tests. In conclusion, the authors thank V. L. Karpov, Yu. M. Malinskiy, and A. S. Fridman for their assistance. There are 1 figure, 2 tables, and 10 refer-

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The Effect of  $\gamma$ -Radiation of  $\text{Co}^{60}$  on the Permeability of Polyethylene for Steam SOV/76-33-7-30/40

ences, 7 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii (Academy of Sciences of the USSR, Institute of Physical Chemistry); Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti (Scientific Research Institute for Cable Industry)

SUBMITTED: August 6, 1958

Card 3/3

80816

21.5011

S/025/60/000/06/04/012

AUTHOR: Finkel', E.E., Candidate of Chemical Sciences

TITLE: Creative Radiations

PERIODICAL: Nauka i zhizn', 1960, No. 6, pp 11 - 16

TEXT: Popular explanations are given for the polymerization process under the effect of gamma-ray irradiation on the samples of polyethylene, polymethylacrylate, vulcanization, etc. A pilot installation is under construction in the USSR for polymerization of polyethylene.<sup>1</sup> The purpose is to find the most advantageous techniques for the future, when atomic power plants of high capacity will be working, making waste from the reactors available as radioactive source. An idea is shown in illustration (p 15) where indium becomes a gamma-ray source by passing the active reactor zone within a circulation in a "radiation contour". Radiation cracking of hydrocarbons is said to be solved soon and will replace the conventional thermal and catalytic cracking. Radioactive chemical sources of electric power are also expected. One possible process scheme for obtaining organic glass is shown in illustration (insert after p 16). New silicone rubber is mentioned, subjected to

Card 1/2

15

4

80816

Creative Radiations

S/025/60/000/06/04/012

irradiation<sup>12</sup> and made suitable for use in a temperature range of -100° and +300°C  
and resistant<sub>13</sub> against gasoline and oil. There are 8 illustrations.

Card 2/2

X

28 (5)

AUTHORS:

Karpov, V. L., Malinskiy, Yu. M., S/032/60/026/01/034/052  
Mitrofanova, L. V., Pinkel', E. E., B010/B006  
Fridman, A. S.

TITLE:

Device for Determination of the Thermal Stability<sup>17</sup> of Poly-  
ethylene- or Rubber Cable Insulations<sup>18</sup>

PERIODICAL:


Zavodskaya laboratoriya, 1960, Vol 26, Nr 1, pp 102 - 103 (USSR)

ABSTRACT:

The device mentioned in the title (Fig 1) consists essentially of an H-shaped frame standing on a steel plate. The latter has an opening in the middle of the crossbeam, through which the post with the loading weights is guided. At its top end, the post is fitted with a plate which transmits the pressure to the sample by means of two inset rodlets. The sample (a piece of cable with the insulation to be tested) is supported by two rodlets also. To indicate subsidence (sample deformation) of the last-mentioned plate by the indicator, the indicator is placed on the plate. Except for the indicator, the device is put in a thermostat, rendering possible sample heating at various rates up to 230°. The thermomechanical curves obtained for samples of high- and low-pressure polyethylene<sup>19</sup> by means of the device described above

Card 1/2

Device for Determination of the Thermal Stability S/032/60/026/01/034/052  
of Polyethylene- or Rubber Cable Insulations B010/B006

are given (Fig 2). The relative measuring error of this device  
is  $\pm 5\%$  at the maximum. There are 2 figures. 

Card 2/2

84637

S/076/60/034/010/019/022  
B015/B064

21.5200

AUTHOR:

Finkel', E. E.

TITLE:

<sup>19</sup>  
Measurement of the Radioactivity of the Vapors of Gasoline and Benzene That Were Tagged With Tritium or Carbon-14

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 10, pp. 2365 - 2366

TEXT: The counter- and charge characteristics of the CBC-2 (SBS-2)<sup>28</sup> and CBC-5 (SBS-5)<sup>28</sup> Geiger counters filled with benzene- or gasoline vapor were investigated. It was found that at a vapor pressure of between 5-25 mm Hg of the counter filled with the mentioned vapors, the plateau is at least 200 v long at an inclination of less than 5% per 100 v. Thus, it is possible to use gasoline- or benzene vapor, as well as ethanol or butane (Ref. 1) to fill Geiger-Müller counters when measuring the radioactivity of tritium- or C<sup>14</sup> tagged substances. The maximum counting rate is in the above case 5000-6000 pulses/min, the dead time approximately  $9.6 \cdot 10^{-4}$  seconds. D. S. Parfenova took part in the experiments. There are Card 1/2

84637

Measurement of the Radioactivity of the  
Vapors of Gasoline and Benzene That Were  
Tagged With Tritium or Carbon-14

S/076/60/034/010/019/022  
B015/B064

3 figures and 1 Soviet reference.

ASSOCIATION: Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti  
(Scientific Research Institute of the Cable Industry)

SUBMITTED: May 28, 1960

Card 2/2



ALEKSEYEV, N.G.; PROKHOROV, V.A.; CHMUTOV, K.V.; FINKEL', E.E., red.; KOGAN, V.V., tekhn. red.

[Use of electronic equipment and circuits in physical chemistry] Pri-  
menenie elektronnykh priborov i skhem v fiziko-khimicheskom issledo-  
vani. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1961. 552 p.  
(MIRA 14:12)

(Electronic apparatus and appliances)

(Chemistry, Physical and theoretical)

*PINKEL E. E.*

3

15.8520

33124

9,2165 (1001, 1331, 1442)

S/638/61/001/000/055/056  
B125/B104

AUTHORS: Karpov, V. L., Malinskiy, Yu. M., Mitrofanova, L. V.,  
Slinitsyn, S. T., Pinkel', E. E., Fridman, A. S. Chernetsov  
S. M.

TITLE: Increase of the thermal stability of polyethylen-insulated  
lines by ionizing radiation

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu  
atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent,  
1961, 383-389

TEXT: A copper wire 1 mm in diameter and insulated with 0.5 mm of  
polyethylene was irradiated by a Co<sup>60</sup> gamma radiation source of  
20,000 g-equ. Ra in a vacuum as well as by an electron linear accelerator  
in the air. The thermal stability of the irradiated samples was deter-  
mined by the analysis of the thermomechanical curves, i.e., of the time  
dependence of deformation under given load and with the temperature rising  
by a constant rate of 50 deg/hr, using a specially built device. The  
deformation that was attained is a measure of thermal stability at given  
temperature and load. The lifetime of the workpiece can be estimated from  
Card 1/4

3

3312:  
S/638/61/001/000/055/056  
B125/B104

Increase of the thermal stability ...

the time dependence of deformation (likewise measurable by the above-mentioned device) at constant temperature and load. At increased temperatures the deformation is the lower, the higher the radiation dose, and remains practically constant up to 250°C. The restriction of deformation under a load of 0.5 kg to about half the radial thickness by irradiation with doses of 100-150 Mrad or by irradiation with 1-Mev (15  $\mu\text{a}/\text{cm}^2$ ) electrons for 2-4 min guarantees the usability of lines above 80°C. The final deformation is increased by a load increase without any change of its nature. The line still remains efficient if the load is quadrupled. The amount of final deformation is not affected by the rate of temperature increase over a wide range. The deformation is only little temperature-dependent under both long and brief load action. A line with irradiated insulation can be exposed to 180°C for at least 4 hrs, and remains efficient for some hours even at 230-250°C. If suitable stabilizers are introduced into polyethylene, the maximum operating time in this temperature range can probably be increased considerably, and the line can be exposed to even higher temperatures for a short time. The increased thermal stability improves the reliability of insulated wires at high temperatures, especially in the case of breakdown, and increases

Card 2/4

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3312h

S/638/61/001/000/055/056  
B125/B104

Increase of the thermal stability ...

the operating time at normal temperatures. Gamma irradiation in vacuo increases the stability at 20° and 90°C, while doses of more than 200 Mrad. reduce it. The irradiation of 0.4 mm thick samples in the air reduces the relative elongation and also the tensile strength at 20° and 90°. The best strength properties are achieved by irradiation in vacuo with doses of up to 100 Mrad. The tensile strength of an insulation irradiated with fast electrons are presented in Table-1. Tensile strength, resistance to frost, electric breakdown and electrical resistance of a sample irradiated with a gamma dose of 100 Mrad or, equivalently, with 1-Mv electrons for 2-4 min were fully satisfactory. The resistance of line insulation to thermal aging drops with increasing radiation dose. Samples irradiated with electrons are more resistant in this respect than samples irradiated with an equivalent gamma dose. There are 6 figures, 6 tables, and 7 references: 5 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: Dolle M., Kelling C. D., Rose D. J. J. Am. Chem. Soc., 76, 4304, 1954; Charlesby A., Bain, T. Brit. Plastics, 30, 4, 146, 1957.

Card 3/4

3

33124

S/638/61/001/000/055/056  
B125/B104

Increase of the thermal stability ...

ASSOCIATION: Gosudarstvennyy n.-i. institut kabel'noy promyshlennosti  
(State Scientific Research Institute of Cable Industry).  
N.-i. fiziko-khimicheskiy institut im. L. Ya. Karpova  
(Scientific Physicochemical Research Institute imeni L. Ya.  
Karpov). Vsesoyuznyy elektrotekhnicheskiy institut im.  
V. I. Lenina (All-Union Electrotechnical Institute imeni  
V. I. Lenin)

Table 1. Tensile strengths of insulations irradiated with fast electrodes.  
Legend: (1) irradiation technique; (2) nonirradiated material; (3) voltage;  
(4) exposure (min); (5) tensile strength, kg/cm<sup>2</sup>; (6) relative elongation,  
%.

Режим облучения (1)	Необлученный материал (2)	Напряжение (3)									
		0,5 Me					1 Me				
		экспозиция, мин. (4)									
		1	2	4	8	16	0,5	1	2	4	
(5) Сопротивление разрыву, $\text{кг/см}^2$	160	148	134	131	158	154	166	150	143	131	
(6) Относительное удлинение, %	480	452	221	144	106	38	461	357	266	165	

Card 4/4

15.8500  
N. 8060

36559

S/081/62/000/006/098/117  
B162/B101

AUTHORS:

Parfenova, D. S., Sokolova, Z. F., Finkel', E. E., Chmutov, K. V.

TITLE:

Study of the effect of ionizing radiation on the moisture penetrability of polyethylene

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 6, 1962, 614, abstract 6P31, (Tr. Tashkentek. konferentsii po mirn. ispol'zovaniyu atomn. energii, v. II, 1959, Tashkent, UzSSR, 1961, 389-395)

TEXT: An investigation is made of the moisture penetrability of polyethylene irradiated with  $\text{Co}^{60}$  gamma-rays in a dose range of 46 to 299 Mrad. It is established that the diffusion coefficient after irradiation in air drops slightly, while the coefficients of penetrability and solubility increase. The drop in the diffusion coefficient is associated with the increase in density of polyethylene through cross-linking as a result of irradiation. The rise in polarity, i.e., the development of carbonyl, carboxyl, and hydroxyl groups in the polymer, and its conversion from a hydrophobic material into a hydrophilic one. The increase in the coefficient of

Card 1/2

Study of the effect of ionizing ...

S/081/62/000/006/098/117  
B162/B101

moisture penetrability is connected with the rise in solubility. The substantial increase in polarity of polyethylene irradiated in air is confirmed by measurements of the dielectric properties. [Abstracter's note: Complete translation.]

Card 2/2

S/844/62/000/000/094/129  
D204/D307

AUTHORS: Karpov, V. L., Leshchenko, S. S., Mitrofanova, L. V. and  
Pinkel', E. E.

TITLE: The effect of various additives on radiational cross-  
linking and thermal stability of irradiated polyethylene  
(PE)

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy kh-  
mii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962,  
547-553

TEXT: The aim of this work was to find suitable stabilizers for  
irradiated PE and thus increase its useful life at higher tempera-  
tures. The additives, i.e. soots and silica gels, a copolymer of  
phenol and styrene,  $H_2N.C_6H_4.N(C_6H_5)_2$ , dinaphthylmethane, dibutyl  
Sn maleate, dibutyl Sn stearate, dibutyl maleate,  $\beta$ -naphthol, and  
phenyl- $\alpha$ -naphthylamine were mixed into PE by rolling and hot-pres-  
sing, in amounts of 1 - 15 parts by weight. The specimens were  $\gamma$

Card 1/3



The effect of various. ....

S/844/62/000/000/094/129  
D204/D307

irradiated in air and vacuum (~100 Mrad, at 0.6 - 0.8 Mrad/hr), and their thermomechanical properties were studied at 150, 200 or 300°C. Channel and 'Vulcan' soots, the phenol-styrene copolymers  $\text{NH}_2\cdot\text{C}_6\text{H}_4\text{.-N}(\text{C}_6\text{H}_5)_2$ , and silica gel 'Aerosol' exerted no stabilizing action on PE; additives containing aromatic groups exerted a pronounced anti-radiation action; additions of silica gel type 'A' ( $\text{SiO}_2$  containing uni- and polyvalent metallic admixtures) and of the organotin compounds exerted a strong stabilizing effect. The specimens containing 10 parts by weight of the above stabilizers had their useful life prolonged from 6 to 60 hours at 200°C and from 200 to 1500 hrs at 150°C. The effects of stabilizers depended on their content; the medium (air or vacuum) and temperature. Additives containing aromatic groups thus prevent cross-linking on irradiation but do not inhibit oxidative ageing processes, and vice versa. Organotin derivatives may participate in reactions proceeding through hydroperoxide radicals and leading to the formation of a network with oxygen bridges. The assistance of N. I. Sheverdina and L. V. Abramova,

Card 2/3

The effect of various ...

S/844/52/000/000/094/129  
D204/D307

who supplied the organotin compounds, is acknowledged. There are 3 figures and 2 tables.

ASSOCIATION: Fiziko-khimicheskiy institut L. Ya. Karpova; NII kabel'noy promyshlennosti (Physico-Chemical Institute im. L. Ya. Karpov; NII of the Cable Industry)

Card 3/3

DZHAGATSPANYAN, Rafael' Vachaganovich; ROMM, Rudol'f Filippovich;  
TATOCHEENKO, Lev Kirillovich; FINKEL', E.E., red.; KOGAN, V.V.,  
tekhn. red.

[Application of radioisotopes to the control of chemical processes]Primenenie radioaktivnykh izotopov dlia kontrolya khimicheskikh protsessov. Moskva, Goskhimizdat, 1963. 343 p.

(MIRA 16:3)

(Radioisotopes—Industrial applications)  
(Automatic control)

ALEKSANDROV, A. Yu.; BERLYANT, S.M.; KARPOV, V.L.; LESHCHENKO, S.S.;  
OKHLOBYSTIN, O.Yu.; FINKEL', E.E.; SHPINEL', V.S.

Study by the Mössbauer effect of the behavior of dibutyltin  
dimaleate as stabilizer in the irradiation of polyethylene.  
Vysokom. soed. 6 no.11:2105-2107 N '64 (MIRA 18:2)

L 00747-66 EPF(c)/ENT(m)/ENP(j)/T/ENA(h)/ENA(1) RPL RM/WW

ACCESSION NR: AP5020964

UR/0190/65/007/008/1319/1322

AUTHOR: Karpov, V. L. ; Leshchenko, S. S. ; Mitrofanova, L. V. ; Finkel', E. E.

TITLE: Characteristics of the radiation crosslinkage of certain polyolefins and their copolymers in a nitrous oxide medium

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 8, 1965, 1319-1322

TOPIC TAGS: polyolefin, polyethylene, polypropylene, copolymer, nitrogen compound, crosslink, radiation effect

ABSTRACT: The effect of nitrous oxide on the radiation crosslinkage of polyethylene, polypropylene and an ethylene-propylene copolymer was investigated by the extraction method. It was shown that nitrous oxide accelerates this process in comparison to radiation crosslinkage attained in vacuum. The greatest acceleration was noted in polypropylene, from which it was concluded that the increased radiation crosslinkage yield is associated with the suppression of degradation. The acceleration effect in polyethylene was smaller since the prevailing process, upon its irradiation, is crosslinking and not degradation. It was suggested that

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L 00747-66

ACCESSION NR: AP5020964

the mechanism of energy dissipation from polyisobutylene to nitrous oxide,  
proposed by J. Okada (J. Appl. Polymer Sci. 7, 1731, 1963), obtains for the  
other polyolefins. Orig. art. has: 4 figures

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-  
chemical Institute) Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti  
(Scientific Research Institute of the Cable Industry)

SUBMITTED: 22Aug64

ENCL: 00

SUB CODE: GC, NP

NR REF SOV: 005

OTHER: 000

Card 2/2

L 64695-65 EMT(m)/EPF(c)/EPF(n)-2/EMP(j)/EWA(n)/EWA(1) GG/RM

ACCESSION NR: AR5012288

UR/0058/65/000/003/D075/D075

SOURCE: Ref. zh. Fizika, Abs. 3D607

AUTHOR: Yegorova, Z. S.; Slovokhotova, N. A.; Leshchenko, S. S.; Karpov, V. L.;  
Finkel', E. E.; Mitrofanova, L. V.

TITLE: Spectral investigation of changes caused by ionizing radiation in polyethylene stabilized by tin dibutyl maleate

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 503-510

TOPIC TAGS: polyethylene, antioxidant additive, spectrographic analysis, ionizing irradiation, ir spectrum

TRANSLATION: It is found that the addition of tin dibutyl maleate reduces the oxidation rate of polyethylene during thermal aging and when it is subjected to ionizing radiation in air. A shift in the carboxyl ion band in the infrared spectrum from  $1615 \text{ cm}^{-1}$  for untreated polyethylene with tin dibutyl maleate to  $1595 \text{ cm}^{-1}$  after irradiation in a vacuum indicates that the polymer radical is joined to the tin atom to form a trialkyl tin salt. This is used as a basis to explain the antioxi-

Card 1/2

L 64695-65

ACCESSION NR: AR5012288

dative effect of tin dibutyl maleate as an additive to polyethylene during thermal aging and irradiation in air.

SUB CODE: GC, MT

ENCL: 00



KARPOV, V.L.; LESHCHENKO, S.S.; MITROFANOVA, L.V.; FINKEL', E.E.

Characteristics of radiation-induced cross-linking of some  
polyolefins and their copolymers in an  $N_2O$  medium. Vysokom.  
soed. 7 no.8:1319-1322 Ag '65. (MIRA 18:9)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova AN SSSR  
Moskva, i Nauchno-issledovatel'skiy institut kabel'noy  
promyshlennosti.

3

L 2265-66 EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/EWA(h)/EWA(l) GG/RM  
 UR/0191/65/000/009/0008/0012  
 678.742.2.01:539.12.04:678.048

ACCESSION NR: AP5022220

AUTHOR: Gladkova, G. I.; Yegorova, Z. S.; Karpov, V. L.; Lashchenko, S. S.;  
 Mitrofanova, L. V.; Slovokhotova, N. A.; Pikel', E. E.; Chernysov, S. M.

TITLE: Thermal stabilisation of irradiated polyethylene by industrial anti-oxidants

SOURCE: Plasticheskiye massy, no. 9, 1965, 8-12

TOPIC TAGS: antioxidant additive, polyethylene, antired additive, gamma radiation, radiation effect

ABSTRACT: The following industrial antioxidants were introduced into polyethylene in amounts of 2, 5, and 10%: 2,2'-methylenabis(4-methyl-6-tert-butylphenol); 4,4'-methylenabis(2-methyl-6-tert-butylphenol); 2,2'-methylenabis(4-ethyl-6-tert-butylphenol); N-isopropyl-N'-phenyl-p-phenylenediamine (nonox 2A); 4,4'-thiobis(5-tert-butyl-m-cresol); 4,4'-thiobis(2-tert-butyl-m-cresol); phosphite of P-24 (P-24 being a phenol-styrene condensation product); and di-β-naphthyl-p-phenylenediamine. The polyethylene samples were then irradiated, kept in air thermostated at 150 and 200°C for various periods of time, and tested for relative elongation and tensile strength. The compounds were found to have a stabilising effect if

Card 1/2

L 2265-66  
ACCESSION NR: AP5022220

3

their content is 10 to 20 times the amount introduced into polyolefins to protect the latter from oxidation during processing. The most effective antiradiation additives kept the elongation of polyethylene irradiated with Co<sup>60</sup> gamma rays at 300-350%. Infrared analysis showed that during irradiation, particularly in the course of thermal aging, the stabilizer concentration in polyethylene decreases markedly. It is found that irradiation not only causes the formation of trans-vinylene unsaturation, but also gives rise to systems of conjugated double bonds whose number increases substantially during thermal aging. Carbonyl groups are formed both during irradiation and thermal aging, but in much smaller quantities than in cable polyethylene. "The authors thank G. Ya. Richmond for supplying the antioxidant samples." Orig. art. has: 7 figures. 4455

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: NT, 00

NO REF SOV: 005

OTHER: 005

Card 2/2

SMIRNOV, Yu.N.; FINKEL', V.A.

Crystalline structure of tantalum, niobium, and vanadium at  
110°-400°K. Zhur. eksp. i teor. fiz. 49 no.4:1077-1082 0 '65.  
(MIRA 18:11)

1. Fiziko-tekhnicheskii institut AN UkrSSR.

L 06156-67 EWT(m)/EWP(j) IJP(c) GG/RM

ACC NR: AP6024546

(A)

SOURCE CODE: UR/0089/66/021/001/0064/0066

AUTHOR: Berlyant, S. M.; Drozdov, V. Ye.; Finkel', E. E.; Orlenko, P. A.; Suroyegin, L. M.; Breger, A. Kh.; Karpov, V. L.; Zorin, V. A.

ORG: none

TITLE: Large-scale radiation cross linking of polyethylene insulation of cable products

SOURCE: Atomnaya energiya, v. 21, no. 1, 1966, 64-66

TOPIC TAGS: radiation chemistry, polyethylene, polymer cross linking, insulated wire, electric cable/ KP gamma ray apparatus

ABSTRACT: In view of the many advantages resulting from the use of irradiated thermally stabilized polyethylene as insulation in cables, the authors describe apparatus developed for the irradiation of such insulation, for use in geophysical cables for very deep well drilling (o.d. 6.5 mm, length ~9 km, weight ~380 kg, volume ~400 l), capable of withstanding temperatures up to 200C and pressures higher than 300 atm. The entire cable was wound on a drum and exposed to  $\gamma$  radiation from  $\text{Co}^{60}$  (total activity 180,000 g-equivalent of radium) from the KP-200 apparatus. Measures taken to ensure uniformity of the gamma radiation, which is an essential factor in the success of the operation, are described. The required dose was 140 Mrad ( $\pm 10\%$ ). At a dose intensity of 63 r/sec and an irradiation time of 610 hr, the productivity of the apparatus was 0.7 kg/hr and the efficiency ~13%. The authors thank G. N. Lisov

Card 1/2

UDC: 621.039.55: 541.15

L 06456-67

ACC NR: AP6024546

for participating in the development of the apparatus, and M. Ye. Yeroshov, M. D. Iarionov, L. K. Topil'skiy, Yu. D. Kozlov, and the late N. A. Kuznetsov for help with the experiments. Orig. art. has: 3 figures.

SUB CODE: 07, 20/ SUBM DATE: 16Oct65/ ORIG REF: 007

Card

2/2

FINKEL, E. Ya.

AID P - 4847

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 7/26

Authors : Stayev, K. P. and E. Ya. Finkel

Title : Highly efficient method of knurling standard threads

Periodical : Stan. 1 instr., 2, 21-23, F 1956

Abstract : The authors describe an automatic machine designed by them for knurling helical threads and other profile cutting on rolling blanks. They also discuss the SF-3 experimental machine tool designed by the Moscow Machine-tool Building Institute specifically for knurling M8 to M10 threads on various bolts, with a capacity of up to 400 pieces per minute. Two photos, 2 tables and 1 drawing.

Institution : As above

Submitted : No date

FINKEL', G., inzh.

More and better dockyard facilities. Mor.flot 22 no.4:26-28  
Ap '62. (MIRA 15:4)  
(Docks--Equipment and supplies)  
(Ships--Maintenance and repair)



FINKEL', G., inzh.

"Shipbuilding materials and ship repairs" by V.M. Sheluchenko.

Reviewed by G. Finkel'. Nor. flot 23 no.1:43 Ja '63.

(MIRA 16:4)

(Shipbuilding materials)

(Ships—Maintenance and repair)

(Sheluchenko, V. M.)

FINKEL', G.M.

Automatic control of the process of grinding clinker in mills with  
a separator. TSement 28 no.6:20-21 N-D '62. (MIRA 15:12)

1. Chlen obshchestvennogo sodeystviya zhuranala "TSement" pri  
Novorossiyskom tsementnom kombinatе.  
(Automatic control) (Gement)

FINKEL', G.F.

Telephone service for state farms in areas where new and idle  
lands are being brought under the plow. Vest.sviazi 16 no.5:  
22-23 Je '56. (MLRA 9:8)

1. Glavnyy inzhener Kustanayskogo oblastnogo upravleniya svyazi.  
(Kustanay Province--Telephone)

ANDREYEV, K.P.; VLADIMIROVA, N.I.; REZUKHINA, A.V.; ZINGEL', M.A.;  
FINKEL', G.M.

Flotation method of isolating yeasts from yeast beer.  
Gidroliz.i lesokhim.prom. 13 no.3:11-14 '60.  
(MIRA 13:7)

1. Nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-  
spirtovoy promyshlennosti (for Rezukhina). 2. Sukhonskiy  
sul'fitno-spirtovoy zavod (for Finkel').  
(Yeast) (Flotation)

STOLYARSKIY, Lev L'vovich. Prinimal uchastiye GLOZMAN, M.K.,  
kand. tekhn. nauk; ADLERSHTEYN, L.TS., inzh., retsenzent;  
FINKEL', G.N., inzh., retsenzent; RIMMER, A.I., inzh.,  
nauchn. red.; KOMAROVA, N.P., red.

[Verifying operations in the finishing stages of shipbuilding and in ship repair] Proverochnye raboty pri dostroike i remonte sudov. Leningrad, Sudostroenie, 1965. 159 p.  
(MIRA 18:8)

FINKEL' G. [N.] inzhener.

Admissible wear for sheet metal hull plating. Mor.flot 16 no.2:  
20-21 F '56. (MLRA 9:5)  
(Hulls (Naval architecture))

FINKEL', G.<sup>1</sup> inzhener.

Practice in protecting hulls from corrosion. Mor.flot 16 no.8:14-15  
Ag '56. (Ships--Maintenance and repair) (MLRA 9:10)

FINKEL', G.N., inzh.

Increasing the coefficient of utilizable space on floating  
docks. Sudostroenie 24 no.9:57-59 S '58. (MIRA 11:11)  
(Docks) (Ships--Maintenance and repair)



(N.J)  
FINKEL', G., inzh.-kapitan 3-go ranga

Methods of speeding up ship repairing and reducing its costs.  
Mor. flot 18 no.8:11 Ag '58. (MIRA 11:9)  
(Ships--Maintenance and repair)

LOGVINOVICH, E.G., inzh.; FINKEL', G.H., inzh.

Permissible size ~~deviations~~ in docking ships. Sudostroenie  
24 no.12:41-45 D '58. (MIRA 12:2)

(Ships)

(Docks)

FINKEL, G.N., insh.

Experience in dockyard repair of ships. Sudostroenie 25  
no.5:44-45 My '59. (MIRA 12:8)  
(Ships—Maintenance and repair)

PINKEL', G.N., insh.

Experience in using ethinyl paints. Sudostroenie 24 no. 6:49-50  
Je '58. (MIRA 11:8)

(Ships--Painting)

FINKEL', G., inzh.-kapitan 3 rang.

Length of the between-docking periods for merchant ships.  
Mor.flot 19 no.12:18-21 D '59. (MIRA 13:3)  
(Merchant ships--Maintenance and repair)

LOGVINOVICH, E.G., inzh.; FINKEL', G.N., inzh.

Reception of slipways in docks. Sudostroenie 25 no.1:49-52  
N '59. (MIRA 13:4)  
(Ships--Maintenance and repair) (Dry docks)

FINKEL', Genrikh Nakhmanovich; DROZHZHIN, K.M., inzh., retsenzent; SHNEYDER, K.M., retsenzent; STOLIARSKIY, L.L., red.; SHISHKOVA, L.M., tekhn.red.

[Organization of rapid floating dock repairing of ships] Organizatsia skorostnogo dokovogo remonta sudov. Leningrad, Gos. soiznoe izd-vo sudostroit.promyshl., 1960. 75 p.

(MIRA 13:11)

(Ships--Maintenance and repair)

ANDREYEVA, N.V., inzh.; FINKEL', G.N., inzh.

Launching and ship-raising structures in capitalist countries  
[from foreign journals]. Sudostroenie 27 no.11:62-65 N '61.  
(MIRA 15:1)

(Shipyards)  
(Cranes, derricks, etc.)



FINKEL', G.N., inzh.

Building of floating docks in the German Federal Republic. Sudostroenie  
29 no.1:81-85 Ja '63. (MIRA 16:3)  
(Germany, West--Floating docks)

LOVYAGIN, Mikhail Aleksand. ovich; KORSAKOV, Vadim Mikhaylovich  
[deceased]; KAGANER, Yakov Borisovich; GARIN, Eduard  
Nikolayevich; VYDREVICH, Iersei Itskovich; REDEKMAN,  
Aleksandr L'vovich; BRAYNIN, Abram Isaakovich; GUBKIN,  
Ivan Vasil'yevich; FINKEL', G.N., retsenzent; FOMENKO,  
O.A., retsenzent; KLITORINA, T.A., red.

[Metallic floating docks] Metallicheskie plavuchie doki.  
Leningrad, Sudostroenie, 1964. 335 p. (MIRA 18:1)

FINKEL', G.N., inzhener-kapitan 3-go rango

Increasing the capacity of docks by the sluicing method. Mr.  
shor. 47 no.7:81-85 J1 '64. (MMA 18:7)

FINKEL', I., inzh.

Dust removal system of roller mills and the driving mechanism of  
sifters have been improved at the Baku Flour Mill No.2. Muk.-elev.  
prom. 27 no.2:22-23 F '61. (MIRA 14:4)

1. Bakinskaya mel'nitsa No.2.  
(Baku—Flour mills)

FINKEL', I. I.

DECEASED

1963

Medicine  
Endocrine glands

c. '63

FINKEL', I.I.

Morphological signs of the general adaptation syndrome in  
experimental thoracotomy. Eksp. khir. i anest. 7 no.6:29-34  
N-D '62. (MIRA 17:10)

1. Iz laboratorii patomorfologii (zav. - prof. Ya.L. Rapoport)  
Instituta serdechno-sosudistoy khirurgii (dir. - prof. S.A.  
Kolesnikov, nauchnyy rukovoditel' - akademik A.N. Bakulev).

BOBROV, A.I.; FINKEL', I.M.,

New techniques in dyeing and finishing colored calfskin velour.  
Leg. prom. 18 no.4:49-50 Ap '58. (MIRA 11:4)

1. Nachal'nik tsekha Rzhenskogo kozhevennogo zavoda "Kommunar" (for Bobrov). 2. Nachal'nik otдела tekhnicheskogo kontrolya Rzhenskogo kozhevennogo zavoda "Kommunar" (for Finkel').  
(Dyes and dyeing--Leather)

FINKEL', Kh.Ya.

Automatic instruments for checking the straightness and length  
of sewing needles. Izv.tekh.no.6:76-77 N-D '56. (MIRA 10:1)  
(Pins and needles)



*Р. П. П. П. П. П.*  
~~WINKEL~~!, Kh.Ya.

Bin-feeding devices and their classification. Stan.1 instr. 29  
no.1:1-3 Ja '58. (MIRA 11:1)  
(Machine tools--Attachments)

FINKEL', Kh.Ya.

The MD-10 automatic machine for continuous thread rolling.  
Bul. tekhn.-ekon. inform. no.8:35-37 '58. (MIRA 11:10)  
(Screw-cutting machines)

FINKEL', Kh. Ya.

Regulated bin-guiding device. Stan.1 instr. 31 no.4 :34-35  
Ap '60. (MIRA 13:6)

(Machine tools--Attachments)

FINKEL', Kh.Ya.

Vertical vibratory conveyers with distributing and guiding devices.  
Stan. i instr. 32 no. 5:26-27 My '61. (MIRA 14:5)  
(Conveying machinery)

FINKEL', Kh.Ya.; CHERPAKOV, B.I.; BABADZHANYAN, Z.S.

Automatic control of a centerless grinding machine. Stan.  
1 instr. 34 no.10:23-25 0 '63. (MIRA 16:11)

S/044/62/000/004/056/099  
C111/C333

AUTHOR: Finkel', L.A.

TITLE: On the properties of the solutions of a class of integro-differential equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 4, 1962, 59, abstract 4B271. ("Issled. po integro-differents. uravneniyam v Kirgizii". No. I, Frunze. AN KirgSSR, 1961, 265-273)

TEXT: The author investigates sufficient conditions for the existence of the solution of the Cauchy problem  $z^{(k)}(x_0) = b_k$  ( $k = 0, 1, \dots, n-1$ ) for the integro-differential equation

$$z^{(n)}(x) = \sum_{k=1}^n p_k(x) z^{(n-k)}(x) + \lambda \int_{-\infty}^x \sum_{k=0}^m K_k(x,t) z^{(m-k)}(t) dt \quad (1)$$

where it is required that the absolute value of the solution be not greater than a certain function of exponential type. In the class of the functions bounded by a certain function of exponential type, the Card 1/2

On the properties of the solutions ... S/044/62/000/004/056/C99  
C111/C333

author investigates, under certain assumptions on  $p_k(x)$ ,  $K_k(x,t)$ ,  
the number of linearly independent solutions of (1). ✓

[Abstracter's note : Complete translation.]

Card 2/2

ACCESSION NR: AT3013103

S/2757/62/000/002/0201/0210

AUTHOR: Finkel', L. A.

TITLE: On the Cauchy problem for one class of linear integro-differential equations with infinite integration limits

SOURCE: AN KirgSSR. Institut fiziki, matematiki i mekhaniki.  
Issledovaniya po integro-differentsial'ny\*m uravneniyam v Kirgizii,  
no. 2, 1962, 201-210

TOPIC TAGS: integrodifferential equation, Cauchy problem, infinite  
integration limits, Fredholm determinant

ABSTRACT: The solution is considered of the Cauchy problem for an  
integro-differential equation of the form

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ACCESSION NR: AT3013103

$$L[z(x)] = \lambda \int_{-\infty}^b \sum_{k=0}^m K_k(x, t) z^{(m-k)}(t) dt + \varphi(x), \quad (1)$$

where

$$L[z(x)] \equiv z^{(n)} + \sum_{k=1}^n p_k(x) z^{(n-k)}$$

with the initial conditions

$$z^{(s)}(x_0) = z_0^{(s)} (s=0, 1, \dots, n-1),$$

and  $x_0$  an arbitrary point of the interval  $J(-\infty < x \leq b)$ . Theorems are derived concerning this function and its solutions, and it is shown that the solution of a similar problem by V. V. Vasil'yev

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ACCESSION NR: AT3013103

(DAN SSSR 1955, v. 100, 5, 849--852) is incorrect, because the latter has incorrectly formulated the Fredholm determinant. Orig. art. has: 36 formulas.

ASSOCIATION: Institut fiziki, matematiki i mekhaniki AN KirgSSR  
(Institute of Physics, Mathematics, and Mechanics, AN KirgSSR)

SUBMITTED: 11Apr62

DATE ACQ: 30Sep63

ENCL: 00

SUB CODE: MM

NO REF SOV: 007.

OTHER: 000

Card 3/3

ACCESSION NR: AT3013104

S/2757/62/000/002/0221/0231

AUTHOR: Finkel', L. A.

TITLE: Cauchy problem for the integro-differential equation of A. I. Nekrasov with infinite integration limit

SOURCE: AN KirgSSR. Institut fiziki, matematiki i mekhaniki. Issledovaniya po integro-differentsial'ny\*m uravneniyam v Kirgizii, no. 2, 1962, 221-231

TOPIC TAGS: Cauchy problem, Fredholm determinant, integrodifferential equation, infinite integration limit, Nekrasov integrodifferential equation

ABSTRACT: The solution of the Cauchy problem

$$z^{(k)}(x_0) = z_0^{(k)}$$

$$(k=0,1,\dots,n-1)$$

(4)

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ACCESSION NR: AT3013104

for the integro-differential equation

$$L[z(x)] = \lambda \int_{-\infty}^b P[z(t)] K(x, t) dt + \varphi(x), \quad (1)$$

where

$$L[z(x)] \equiv z^{(n)} + \sum_{k=1}^n a_k(x) z^{(n-k)}, \quad P[z(t)] \equiv \sum_{k=0}^m b_k(t) z^{(m-k)}, \quad m < n,$$

is considered under the assumption that the kernel  $K(x, t)$  of Eq. (1) is bounded and continuous in the domain  $Q(-\infty < x, t \leq b)$  and the function  $\varphi(x)$  is bounded and continuous in the interval  $J$ , the coefficients  $a_1(x), \dots, a_n(x), b_0(x), b_1(x), \dots, b_m(x)$  are continuous in  $J$  and such that

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ACCESSION NR: AT3013104

$$\int_{-\infty}^b dt \int_{x_0}^t |H(h,t)| dh < \infty; \int_{-\infty}^b G(t)K(x,t)dt$$

converges absolutely and uniformly in this integral. Generalized Fredholm relations are formulated for the inhomogeneous integral equation

$$AF(x) = f(x), \quad (8)$$

where  $f(x)$  belongs to class  $C$  of continuous and bounded functions in the interval  $J$ , and several theorems are proved first with respect to the eigenvalues and eigenfunctions of its kernel. The Cauchy problem for Eq. (1) with arbitrary initial conditions has a unique solution if the eigenvalues of the kernel are not roots of the Fredholm determinant. Orig. art. has: 35 formulas.

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ACCESSION NR: AT3013104

ASSOCIATION: Institut fiziki, matematiki i mekhaniki AN KirgSSR  
(Institute of Physics, Mathematics, and Mechanics, AN KirgSSR)

SUBMITTED: 20Apr62

DATE ACQ: 30Sep63

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 000

Card 4/4

ACCESSION NR: AR4039294

S/0044/64/000/003/B079/B080

SOURCE: Ref. zh. Matematika, Abs. 3B374

AUTHOR: Finkel', L. A.

TITLE: The solution to the Cauchy problem for the integro-differential equation of A. J. Nikrasov with an infinite interval of integration

CITED SOURCE: Sb. Materialy\* 7-y Nauchn. konferentsii Kafedry\* vyssh. matem. Frunzensk. politekhn. in-t. Frunze, 1963, 57-63

TOPIC TAGS: Cauchy problem solution, A. J. Nikrasov integro-differential equation, infinite integration interval, Fredholm theory

TRANSLATION: For the integral equation

$$F(x) = f(x) + \lambda \int_{-\infty}^0 d\eta \int_{x_0}^x H(\eta, t) K(x, t) F(\eta) d\eta$$

the Fredholm theory is constructed ( $f(x)$  belongs to the class C of continuous

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ACCESSION NR: AR4039294

bounded functions in the interval  $I(-\infty < x \leq b)$ ; solutions to equation (1) are also sought in the class C). In particular, an equation is constructed which is conjugate (adjoint) to equation (1). The obtained results are applied to an investigation of the solvability of the Cauchy problem

$$z^{(k)}(x_0) = z_0^{(k)}; k = 0, 1, \dots, n-1; x_0 \in I,$$

for the integro-differential equation

$$L[z] - \lambda \int_{-\infty}^b P[z(t)] K(x, t) dt + \varphi(x);$$

$$L[z] = z^{(n)} + \sum_{l=1}^n a_l(x) z^{(n-l)}; P[z] = \sum_{l=0}^m b_l(x) z^{(m-l)}$$

in the case  $m < n$ . It is noted that it is possible to consider the case  $m > n$  in a manner analogous to what T. J. Vigranenko did (RZh Mat, 1957, 4071). Many of the results are given without proof. V. Fyodorov.

DATE ACQ: 22Apr64

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SUB CODE: MA

ENCL: 00



FINKEL', L. A.

USSR. "Silk Manufacture and Trade"  
Quality ratio of \_ocooms., Tekst. prom, No 2, 1952

Monthly List of Russian Accessions, Library of Congress,  
March 1952. UNCL

FINKEL, L.A.

Automatizing the cocoon drying process. Tekst.prom.14 no.12:  
46-47 D'54. (MIRA 8:2)

1. Starshiy sotrudnik Sredne-Aziatskogo nauchno-issledovatel'sko-  
go instituta shelkovodstva.  
(Silk manufacture)

FINKEL', L.A.

Efficient conditions for cocoon drying. Tekst. prom. 17 no.8:19-20  
Ag '57.

(MIRA 10:9)

(Silk manufacture).

FINKEL', L. A., Cand Tech Sci -- (diss) "On the new technological  
process of drying silkworm cocoons in <sup>mechanical box</sup> ~~automatic cocoon drying boxes~~ <sup>dryers</sup>."  
Tashkent, 1958, ~~116~~ 18 pp (Min of Higher Education USSR, Tashkent  
Textile Inst), 120 copies (KL, 15-58, 116)

-50-

FINKEL', L.A., inzh.-tekhnolog

Sorting bench developed b the Central Asia Scientific Research  
Institute of Sericulture. Tekst.prom. 20 no.4:66 Ap '60.  
(MIRA 13:7)  
(Uzbekistan--Sericulture--Equipment and supplies)

FINKEL', L.A.; SIMONOVA, G.P.

Organization work and small-scale mechanization of operations in  
cocoon drying. Izv.vys.ucheb.zav.; tekhn.tekst.prom. no.6:3-9 '60.  
(MIRA 14:1)

1. 'Uzbekskiy nauchno-issledovatel'skiy institut shelkovodstva.  
(Uzbekistan--Sericulture)

FINKEL', L.A., inzh.-tekhnolog

Improvement of the quality of dry cocoons. Tekst.prom. 21  
no.9:17-18 S '61. (MIRA 14:10)

1. Starshiy spetsialist po shelku Ministerstva zagotovok  
Uzbekskoy SSR.

(Sericulture)

RENKEVICH, Yu.L.; FINKEL', L.M., inzh.

Readers' letters. Geod. 1 kart. no.11:63-69 N '58.

(MIRA 11:12)

1. Inspektor otryada No.21 Vostochno-Sibirskogo aerogeodezicheskogo  
predpriyatiya (for Renkevich). 2. Foto-TSekh Moskovskogo  
aerogeodezicheskogo predpriyatiya (for Finkel').  
(Surveying)



3(4)

AUTHOR: Finkel', L. M., Engineer of the SOV/6-58-11-11/15  
Photographic Workshop of the Moscow AGP (Aerial Surveying  
Authority)

TITLE: Contact Printer for Screen Printing (Kontaktnyy stanok dlya  
shtrikhovoy pechati)

PERIODICAL: Geodeziya i kartografiya, 1958, Nr 11, pp 65-67 (USSR)

ABSTRACT: Measuring scales are usually duplicated from the original  
sets (which are engraved on glass or on a filmcoated glass)  
by a photographic printing process. In this process there has  
hitherto been used a contact printer with a diffuse illumin-  
ation of the negative. The scales thus produced exhibited an  
irregular density. On the basis of investigations carried out  
in the Moscow AGP (Aerial Surveying Authority) a special  
contact printer has been designed and constructed which  
operates with an almost parallel beam of light. The principal  
design of such a printer is described. This printer permits  
to obtain printed dashes with a high quality and free from  
shading even from such negatives, which do not lend them-  
selves to a duplication on conventional printers. There are  
2 figures.

Card 1/1

FINKEL M.

RUMANIA / Chemical Technology. Chemical Products. H  
Cellulose and its Derivatives. Paper.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 69381.

Author : Finkel M., Barbassch S.

Inst : Not given.

Title : Experiments on the Production of Cellulose from  
Reed in Accordance with the Sulfate Method and its  
Variants. The "Caustic-Sulfur" Process and the  
New "Thiosulfate" Process.

Orig Pub: An. Inst. cercetari si experim. ind. lemn. si hirt.,  
1953, No 13, 273-289.

Abstract: Laboratory and pilot plant experiments pertaining  
to the production of cellulose (C) from reed with  
the use of sulfur introduced into treating solu-  
tions are described. The introduction of sulfur  
shortens the digesting time compared to that of

Card 1/2

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RUMANIA / Chemical Technology. Chemical Products. H  
Cellulose and its Derivatives. Paper.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 69381.

Abstract: the sulfate method (SM). Physical and mechanical properties of the obtained C are inferior to those of cellulose obtained by the sulfate method. A new modification of the SM has been developed. It is called the thiosulfate method. It permits shortening of the digestion time and yields C of satisfactory mechanical properties.

Card 2/2

II-33

ROMANIA/Chemical Technology. Chemical Products and Their  
Application. Cellulose and its Derivatives.  
Paper.

Libs Jour: Ref Zhur-Khin., No 2, 1959, 6804.

Author : Finkel, M.

Inst :

Title : Alkaline Methods of Manufacturing of Cellulose from  
Reeds for Paper Industry.

Orig Pub: Celuloza si hirtic, 1956, 5, No 7, 161-167.

Abstract: The sulfate method of manufacturing of cellulose and  
the method with the application of  $\text{Na}_2\text{CO}_3$  and S were  
studied. The relation between the consumption of  
active alkali and the hardness index during the pulping  
process was established. The effect of S on the deligni-

Card : 1/2

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NUMERICAL/Chemical Technology. Chemical Products and Their  
Application. Cellulose and its Derivatives.  
Paper.

R-33

Abs Jour: Ref Zhur-Khim., No 2, 1959, 6804.

fication in the soda-sulfur method was investigated.  
The possibility of repeated utilization of black lye with-  
out encumbering the process of cellulose bleaching is  
discussed. - From the author's summary.

Card : 2/2

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Finkel, H.

RUMANIA/Chemical Technology, Chemical Products and Their  
Application, Part 4. - Cellulose and Its Deriva-  
tives, Paper.

H-33

Abs Jour: Referat. Zhurnal Khimiya, No 10, 1958, 34665.

Author : M. Finkel.

Inst : Not given.

Title : Digester-Desintegrator of Continuous Action for Hemi-  
cellulose Production of Reed.

Orig Pub: Celuloză și Hirtie, 1957, 6, No 4, 128-130.

Abstract: The above mentioned aggregate and auxiliary installa-  
tions pertaining to it for manufacturing hemicellu-  
lose by the soda method under atmospherical pressure  
are described.

Card : 1/1

Country : RUMANIA H  
Category :  
Abs. Jour : 44399  
Author : Finkel, M.  
Institut. :  
Title : A Preliminary Hydrolysis of Raw Material as a  
Method of Treatment in Production of Sulfate  
Cellulose for  
Orig. Pub. : Celul. si hirtie, 1957,6, Artificial Fibers  
No 12, 425-427  
Abstract : Data are given on pre-hydrolysis by water and  
acid of pentosan-containing raw material, es-  
pecially annual plants, and the effect of  
this treatment on cellulose. Author's resume.

Card: 1/1

RUMANIA / Chemical Technology, Chemical Products and Their  
Application. Cellulose and Its Derivative. Paper.

H-33

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 17802

Author : Finkel, M.

Inst : Not given

Title : Derivation of Cellulose for Artificial Fiber from One-  
Year Old Plants

Orig Pub : Celuloza si hirtio, 1958, 7, No 1, 33-34

Abstract : Utilization of one-year old plants for the manufacture  
of cellulose (C) and artificial cellulose fiber is  
hampered by high content of inorganic substances present,  
particularly  $SiO_2$  (I). As the plants grow, proportion  
of the soluble I in alkali increases. Therefore, in the  
manufacture of C it is essential to employ mature plants.  
Quantity of the alkali insoluble I in various parts of  
a plant is present in the following decreasing order:

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RUMANIA / Chemical Technology, Chemical Products and Their  
Application. Cellulose and Its Derivative. Paper.

H-33

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 17802

loaves, ears, knots, stocks. From reed, containing 2.31% I, and while employing sulfite process, C with 3.4% ash is obtained that contains 89% I. After the three-stage bleaching (with the cold caustic treatment) C contained 1.70% ash of 97.6% I. C obtained in the sulfite process contained 1.70% ash and after bleaching - 0.20% ash of 20% I but of high pentazano content. The preliminary hydrolysis (P.H.) of raw material decreases the hemi-cellulose content in C. The sulfate type C derived from straw, after PH contains 0.21%, and after bleaching 0.077% ash. It is assumed that from the one-year old plants it is possible to obtain C of low ash content (obtained from the sulfate treatment followed by caustic enrichment and heating or obtained from the sulfate treatment preceded by PH). -- G. Markus

Card 2/2

Country : RUMANIA H  
Category :  
Abs. Jour : 44402  
Author : Oprea, Gh.; Apostol, V.; Finkel, M.;  
Institut. : Zaharescu, I.  
Title : Production of Sulfate Cellulose with a High  
Yield from Coniferous Woody Tissue in Rumania  
Orig. Pub. : Celul. si hirtie, 1958, 7, No 9, 364-374  
Abstract : The possibility was established of producing  
sulfate cellulose with a high yield (55-65%).  
Technical-economic data are given on advantages of using this product. Authors' resume.

Card: 1/1

FINKE L, M.

RUMANIA / Chemical Technology, Chemical Products and H  
Their Application, Part 4. - Cellulose and  
Derivatives, Paper.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 63057.

Author : M. Finkel

Inst : Not given.

Title : Ross's Graph as Auxiliary Mean for Studying  
Technological Process of Cellulose and Semi-  
cellulose Manufacture.

Orig Pub: Celuloza si hirtie, 1958, 7, No 3, 87 - 90.

Abstract: The Ross's graph serves for the explanation of  
data obtained at the cellulose manufacturing,  
if one parameter was changed in a series of  
experimental digestions. Explanations how  
to plot a Ross's graph and examples of prac-  
tical application thereof are presented.

Card 1/1

AUTHOR: Finkel, M.Ya.

SOV/68-58-9-12/21

TITLE: On the Problem of Improving Technical-Economical Indices of the Production of Raw Benzole (K voprosu uluchsheniya tekhniko-ekonomicheskikh pokazateley proizvodstva syrogo benzola)

PERIODICAL: Koks i Khimiya, 1958, Nr 9, pp 45-47 (USSR)

ABSTRACT: Variations in the consumption of steam, absorption oil, electric power and water per ton of raw benzole on various coking works are discussed. It is concluded that in order to improve the operation of benzole plants the following measures should be taken: 1) wider application of preheating the oil in deflegmators and heat exchangers; 2) heat exchanger of low efficiency which cannot be reconstructed should be replaced by modern apparatus designed by Giprokoks; 3) the amount of absorption oil should be limited to a maximum of 50 m<sup>3</sup>/ton of raw benzole;

Card 1/2

SOV/68-58-9-12/21

On the Problem of Improving Technical-Economical Indices of the  
Production of Raw Benzole.

and 4) in order to separate naphthalene and benzene  
hydrocarbons boiling to 180°C from the reflux and their  
return to debenzolised oil, the use of an additional  
column for distilling reflux should be tested.

There is 1 figure.

Card 2/2

FINKEL, M.A., dotaent; KAHITOVA, M.I.

Vacuum extractor in obstetrical practice. Akush. i gin.  
no.1:88-90 '65. (MIRA 18:10)

1. Rodil'nyy dom No.4 (glavnyy vrach V.D. Aleshina), Tashkent.

FINKEL', M. YA.

27153. KOPELEVICH, G. V., FINKEL', M. YA. Metod opredeleniya potentsial'nykh i fakticheskikh smol v poglotitel'nykh maslakh dlya ulavlivaniya syrogo benzola. Zavodskaya laboratoriya, 1949, No.8, s. 1007-08.

So: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949.

1ST AND 2ND QUARTS										PROCESSES AND PROPERTIES INDEX										10TH AND 8TH QUARTS									
FINKEL, M. Ya.																													
<p>753. APPROXIMATE METHOD FOR DETERMINATION OF VAPOUR PRESSURES OF TECHNICAL OILS. Kpeliyich, G. V. and Finkel, M. Ya. (Zavodskaya Laboratoriya, (Factory Lab.) Apr. 1949, vol. 15, 479-480).</p> <p>An account is given of the determination of the vapour pressures of oils by measuring the change in weight of a sample which occurs when a known volume of air is passed through it at a suitable temperature.</p>																													
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>10TH AND 8TH QUARTS</p>																													



Finkel, M. YA.

526

AUTHOR: Finkel', M.Ya. (UKhIN), Lyukimson, M.I. and Kobzantsev, V.B. (Zhdanovskiy Coke Oven Works)

TITLE: On lowering the acidity of ammonium sulphate. (O snizhenii kislotnosti sul'fata ammoniya.)

PERIODICAL: "Koks i Khimiya" (Coke and Chemistry), (Coke + Chem. p/107) 1957, No. 4, pp. 37 - 39, (U.S.S.R.) ZHDANOV

ABSTRACT: It is stated that in order to decrease the acidity of ammonium sulphate, oily impurities in the mother liquor should be separated. Observations indicated that if sufficient settling time is provided, oily and tarry impurities float on top and can be removed from circulation and thus the subsequent contamination of the salt can be prevented. In the Zhdanovsk Works the circulation of the mother liquor was modified, namely a large capacity tank (about 43 m<sup>3</sup>) was included as a settling capacity. Floating impurities were thus periodically removed from the circulation. This temporary measure was later replaced by the following scheme. The circulation pot was used as a settling tank. The liquor circulated in the saturator independently from the circulation pot by joining a pump directly to the saturator to withdraw the mother liquor from its middle zone and delivering it to the agitator. The circulation in the circulation pot was kept low in order to permit the separation of oily and tarry impurities. In addition, the washing of crystals in centrifuges was carried out with water heated to 70 °C. The above measures decreased the acid content of salt from 0.194-0.195% to 0.006-0.025%. There are 2 tables.

Finkel, M. Ya

AUTHOR:

Finkel', M. Ya.

68-8-11/23

TITLE:

On Decreasing the Temperature of Crystallization of Creosote Absorption Oil During Its Regeneration. (O snizhenii temperatury kristallizatsii rabotayushchego kamennougol'nogo poglotitel'nogo masla v protsesse ego regeneratsii).

PERIODICAL:

Koks i Khimiya, 1957, No.8, pp. 30-32 (USSR)

ABSTRACT:

In order to decrease the crystallization temperature of creosote absorption oil, the method of its regeneration was modified. The residues were removed from the regenerator at 270° C or somewhat higher temperatures (analysis of residues - table 3). The temperature of the oil in the regenerator was lowered from 170-175° C to 150-155° C and the consumption of direct steam from 4-5 to 2.5-3.0 ton/hr. With such practice a low temperature of crystallization of the circulating oil is maintained by removing from it the fraction boiling above 270° C. The quality of the absorption oil, before and after the above change in practice was introduced, is shown in table 4. The following participated in the work: M. A. Kogan, A. D. Kudlayev, V. M. Zaychenko (from Giprokoks) and S. B. Kotel'nikov, P. M. Rodshteyn, M. I. Lyukimson, V. B. Kobzantsev, A. M. Sverkovich and F. Ya. Ratgauzer (from Zhdanov Coke Oven Works). There are 4 tables.

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68-8-11/23

On Decreasing the Temperature of Crystallization of Creosote Absorption Oil  
During Its Regeneration. (O snizhenii temperatury kristallisatsii  
rabotayushchego kamennougol'nogo poglotitel'nogo masla v protsesse ego  
regeneratsii).

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